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THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY aims to give thorough instruction in *Civil, Mechanical, Chemical, Mining, Electrical* and *Sanitary Engineering;* in *Chemistry, Electrochemistry, Architecture, Physics, Biology* and *Public Health, Geology,* and *Naval Architecture.*

To be admitted to the Institute, the applicant must have attained the age of seventeen years and must pass examinations in algebra, plane and solid geometry, physics, history of the United States (or ancient history), English, French and German. Preparation in some one of a series of elective subjects is also required. A division of these examinations between different examination periods is allowed. In general, a faithful student who has passed creditably through a good high school, having two years' study of French and German, should be able to pass the Institute examinations.

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The Technology Review

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HISTORY AND PREPAREDNESS

Alumni Council appoints a Committee on Permanent Historical Exhibit and hears preliminary report of Preparedness Committee—Technology Christian Association work described

The Alumni Council meeting held November 27 at the Engineers Club drew a large attendance. I. W. Litchfield, '85, chairman of the Preliminary Committee on the Development of Technology's Resources for Peace and War, made a report of progress and asked for an extension of time, as one member of the committee, Raymond B. Price, '94, had not yet returned from Europe. The committee suggested tentatively, however, that the Alumni Association may be of help to the Government as follows:

(1) By coöperating with the Institute in its commercial and scientific research, and possibly by assisting in securing funds for that purpose.

(2) By canvassing the alumni with the object of finding out who among them have been conducting researches and the character of the researches.

(3) By helping to establish a propaganda that will show the fundamental necessity of research and help to stimulate it generally as well as along special lines that may be particularly useful, these lines to be the subject of investigation and recommendation by the committee.

(4) By making a canvass of the alumni to find out those whose experience would make them particularly useful for the varied needs of the country in case of war.

(5) By assisting as far as possible in making military instruction at Technology more attractive, and by giving all the assistance it can to the newly formed Engineer Corps.

(6) By asking for suggestions from the alumni generally, it can undoubtedly secure points of great value to the country covering the entire preparedness program.

(7) By going into this matter thoroughly, as an alumni organization we can blaze the way so that the government representatives will be equipped to canvass other similar institutions to the best advantage.

Mr. James P. Munroe, '82, then presented a recommendation from the committee in charge of the exhibit, "Fifty Years of Technology." The committee recommends a permanent exhibit and it is the unanimous opinion that, for the present at least, such an exhibit should be limited to the historical side, including everything of value that can be obtained concerning the incorporators, members of the Corporation, members of the Faculty, and benefactors of the Institute, as well as all similar material referring to the alumni and to undergraduate life. The committee is pleased to note that the bursar of the Institute has made Mr. Theodore Grover custodian of this proposed exhibit, which may be kept in the former office of the President of the Institute in the Rogers building. Messrs. Burton, Read and Litchfield were made a sub-committee to confer with Dr. Maclaurin and to draw up a general plan of exhibit for submission to a later meeting of the whole committee.

Mr. Munroe further reported that Dr. Maclaurin has expressed himself by letter, as willing to allow the use of his room in the Rogers building, should that seem desirable, and also to provide an honorarium of about four hundred dollars a year, for two years, to secure the services of a competent historian. It was the sense of the sub-committee that the work of gathering the material should be largely placed in the hands of Mr. Read, to whom the above honorarium should be paid.

It was unanimously agreed that the proposed exhibit should be three-fold: (1) an exhibit including everything of importance that can be obtained referring to the history of the Institute and to the lives of the incorporators, benefactors, members of the Corporation and members of the Faculty; (2) an exhibit covering the activities of the undergraduates in the successive years; and (3) an exhibit covering the acts of the alumni as individuals, and of the various alumni organizations.

It was informally agreed that the first exhibit should be placed in the room formerly occupied by the President, and that the second and third exhibits should be located in the Walker Memorial. A fourth and essential part of the scheme, namely, as complete a collection as possible of books and pamphlets written by the alumni, should be placed in a special alcove of the general library.

It was the sense of the sub-committee that the triple exhibit should include at least the following things, namely:

A biography, with portrait if possible, of every deceased incorporator, benefactor, member of the Corporation and member of the teaching staff, with reference to the sources from which the biography is prepared.

An abstract of the records of the Corporation, giving a complete summary of all important acts, with references to volume and page.

Portraits and photographs of the various Presidents and other officials.

An abstract of the records of the Faculty along the same general lines as those of the Corporation.

Views of all the buildings occupied by the Institute, with a history of each.

Pictures of class rooms and other interior views of buildings sooner or later to be torn down.

As complete a set as possible of pamphlets, leaflets, newspaper extracts, etc., relating to the history of the Institute.

Autograph letters and original documents, as far as they can be obtained, having any important connection with the growth of the Institute.

A complete set of the regular and occasional publications issued by the Institute, by the alumni and by the undergraduates.

A card catalog (in triplicate) of official publications, alumni publications, and undergraduate publications.

Complete sets of material issued in connection with the various inaugurals, anniversaries, etc.

Statistical charts of the growth of the Institute and of the development of various functions connected with it.

Group photographs of the successive classes at graduation.

Programs, posters, etc., of the Tech Shows and other performances carried on by Institute men.

A summarized history of the various alumni organizations.

A summarized history of the various undergraduate organizations.

Complete sets of material issued in connection with the various reunions.

The issuing of a volume analogous to the quintennial catalog of Harvard, in which a leading feature shall be the necrologies of men associated in one way or another, with the Institute.

It was *voted* that a standing committee on this exhibition and historical collection be appointed as one of the regular standing committees.

The chairman, Mr. Knight, then introduced Professor Miller, a guest of the evening, who told the Council of the new mechanical engineering laboratories. He presented pictures that were taken, and the Council enjoyed exceedingly, his description of these wonderful laboratories.

By the consent of the Council, an item of new business was taken up. Mr.

Whiting, '89, proposed that the question of appointing visiting committees to the several departments, should be considered by the Executive Committee, and that the Executive Committee should consult President Maclaurin in regard to such appointments. Several of the Council spoke on this topic; Messrs. Noyes, Bowditch, Tyler and Munroe.

Professor Tyler also mentioned the Newland's Bill which is before Congress, and which will grant to the Land Grant Colleges for Research, $15,000 a year. He spoke of the possibility of this bill being passed at the next session of Congress, and told that a former student of the Institute, a graduate of Course VI, Mr. Potter, now dean of the Engineering Department of the Kansas State University, was instrumental in fostering this bill.

Professor Tyler also suggested that several meetings of the Council be held in the new building of the Institute.

The chairman then introduced Mr. Walter B. Snow, '82, who spoke of the organization of the Technology Christian Association. He told of the interest and of the active work of the secretary who has been so efficient. He then introduced the secretary, Mr. Cushman.

Mr. Cushman spoke of the work of the Technology Christian Association; he showed what is called "The Technology Bible," which shows the activities of this association. He also presented a pamphlet which is being distributed among the students, which tells of the talks which are given during the week, in the hours when students are free. He also spoke of the recent endeavors to collect money from students of the Institute to be sent to students in the prison camps of the European War. Mr. Cushman's outline of the activities of T. C. A. interested the Council very much.

Professor Sedgwick next outlined his recent interest in T. C. A. and told of his endeavor to help this cause which he thought was very worthy. He felt that at Technology we have little human interests, and believed that we should emphasize more the human side of our students.

Dean Burton was then called upon to tell of his opinion of this association, and he commended it enthusiastically, and told how this association was helping the Dean's office in particular, in its appointment of advisers to help the new students. He spoke also in brief, of student government at Technology.

Tech Restaurant Excellent

The more recent graduates of the Institute will be particularly interested to learn that, although the Walker Memorial is not completed, and the facilities for serving lunches are of a very temporary character, the lunch room in the basement of building two is most popular, not only among students, but among professors. It is managed by Bursar Ford, and is in direct charge of Mrs. Helen E. McLean of Simmons College. The food is at least equal to the very best lunch rooms in Boston, although the variety may not be as great as some of them.

For the present it has been impossible to give anything but caféteria service. It is an indication, however, of the superior facilities that we shall enjoy when the Walker Memorial is completed, and proper facilities are afforded for restaurant service.

Death of a Former Instructor

Robert G. Valentine, ex-Indian commissioner and chairman of the Massachusetts Minimum Wage Board, died suddenly in New York on November 14.

His administration of the Bureau of Indian Affairs was marked by a constructive policy which resulted in saving the Indians much of their land, and opening to them better opportunities of education.

Mr. Valentine's most valuable work was in the study of industrial conditions, and the settlement of industrial disputes as an independent counselor. He was graduated from Harvard in 1896, and for a time was an instructor in English at the Institute of Technology.

LIFE IN THE DORMITORIES

Something like real College life at the New Technology—How the "Dorms" impressed a newspaper man

"Tech, with dormitories of its own, is beginning to be a real college," said a senior. "We may not live to see it, though. We have gone through our course in the period when Tech men were still living around town or commuting from their homes and only meeting each other in the class rooms and special societies. All that will not be changed in a year because 150 of us happen to be housed in the new dormitories. But the fellows just entering Tech will see something that looks like real college life.

"Why," he continued with rising enthusiasm, "I wouldn't wonder if sometime the Institute had a crew in the same class with Harvard's or Cornell's and a football team—."

"Oh, no. Not that," interposed his roommate, who is a Yale graduate as well as a senior at Tech. "You'll never get the Faculty over here to realize how much more important athletics is or ought to be, than lectures and lab work. Just imagine trying to pull a squad of fifty or sixty Institute men out for football every afternoon in the week at 2 or 3 o'clock. It couldn't be done."

"I guess you are right," admitted the other lad.

"Probably, though, with all this water in front of us there will be a great impetus to canoeing, and the tennis tournaments between houses will make something doing."

How to be a college without ceasing to be just Tech, the only and inimitable "Boston Tech" as the hinterland persists in naming the Massachusetts Institute of Technology, is one of the problems which President Richard C. Maclaurin and his associates are starting in to work out on a 2000 foot front extending from Massachusetts avenue to Main street, Cambridgeport.

In a large residence hall of Florentine architecture, alongside the monumental domes of the former shoe and leather building, a small proportion of the Tech boys who do not live at home are now housed in accordance with the Institute's first dormitory plan.

The arrangements are far from complete, as yet. Those, indeed, who had engaged rooms for the present school year, returned to Boston late in September to find the plasterers still busy in the comfortable-looking studies and sleeping rooms, which were supposed to be theirs. With a rebate in their pockets, some of these youths sought temporary residence across the river in Boston. Others enjoyed the Capuan delights of the Cambridge Y. M. C. A. About eighty of them accepted the cordial invitation of the Tech bursar to sleep in his "morgue," a hall where, just as in a hospital ward, cot beds were arranged in long lines. There the boys bunked out until the second week in November, when they moved into their own several cubicula.

"It was the best thing that could have happened to some of us to have five weeks in that morgue," says one of the dormitory fellows. "In the interest of sociability, I would like to propose that in the first month of the term each year everybody be required to sleep in a ward with everybody else. We got acquainted there in a way we never could have done anywhere else. The only drawback was the four snorers, and we undertook to provide clothespins for their noses."

Now that at last the boys who were lucky enough to draw rooms for the new dormitories have laid their rugs and lighted their lamps, an important addition to the night-time glow over the Charles river basin may be noted even from the Back Bay esplanade. Far beyond midnight, too, the gleams from these windows are reflected in the water, for Tech men, in their new quarters, live up to their old reputation of grinding

more hours a day than they sleep. To speak in the vernacular of old Harvard, every dormitory at Technology is pretty sure to be a college house. It is inconceivable that any unit in the outfit along the esplanade should ever become as famous for its poker parties as Thayer Hall has been at various periods of its history, or that studying for an examination will ever be as unpopular as it is, or used to be reputed to be, among the men in Beck Hall.

At present, indeed, it is not so easy as one might think to visit a few of the boys in their new quarters on a November evening. If you purpose in any way to interrupt them in their work you are *persona non grata*. The open door policy goes to the discard whatever time the shades are drawn. Instead of slipping by the door of a proctor who may or may not "proc" you have in invading a Tech dormitory to face a stalwart custodian who doubtfully surveys your credentials and your leather bag and tells you ominously that Mr. Ford has given explicit orders not to allow any selling or soliciting in the building.

"But this isn't a canvassing proposition, my dear sir; my note of introduction from Mr. John Ritchie, publicity agent of the Institute, tells you expressly that I would like to look around a little among the rooms to write an article for a Sunday newspaper. You see I have got a lot of facts about these dormitories from Mr. Ritchie, but how am I going to get the atmosphere of the place if I don't talk a bit with the boys?"

That sparkling reference to "atmosphere" exploded a second line of objections.

"Well, it may be all right, but Mr. Ford has given definite orders to keep interruptions away from the boys. These fellows are not like Harvard students, you understand. They have to study, they do. Why, there ain't a night but I step outside about 3 o'clock to see if everything is all right and there is the light streaming from half a dozen windows where the boys are still doing their lessons.

"We'll be glad, though, to show you some of the rooms, since your letter looks all right. But say"—with just a reversion to the suspicious tone—"you better leave that bag in my office. It looks kind of heavy to lug up five flights of stairs."

Cordiality could not have been kinder than that of the custodian and his assistant, once the dread of having admitted a canvasser was finally allayed. It was even permitted to have brief but informational interviews with several of the occupants of suites and single rooms. It was quite characteristic of Tech that not all the boys wanted to talk.

Glimpses into perhaps a dozen occupied rooms at 8 o'clock in the evening and not a card party in sight! Everybody busy over books! Can this condition last after there have crept in the manifold little temptations and excitements that make up college life as it is lived at any old college?

"These dormitories, as we understand it," said one of the youths, "are not intended to be especially sociable places. Sociability is left for the Tech Union, which is now temporarily located in the main building. They are going to have this in the Walker Memorial building, that is going up. You probably noticed it just above here. In these four sections we have no general room for social purposes. The different clubs and associations that used to meet in the old Union on Stuart street are just as active as ever, and I suppose they will be more so as soon as the Walker Memorial is finished."

Here, then, is how far Tech has gone in its ambitious scheme of making genial human beings out of the excellent engineers produced in its class rooms. Since about 1908, as those familiar with Institute happenings are aware, there has been a continuous movement toward supplying the social needs of the student body. Even before the school moved across the river this had gone so far that the opportunities for a natural born "joiner" at Tech were as many as at any university in the land.

The Union was opened to students in 1908. Its dining room on the ground floor of the Pierce building soon became, perhaps, the most extensively, though not

expensively, used banquet hall in Boston. Always with the sanction and support of President Maclaurin and Dean Burton there have grown up almost innumerable societies to which a man with special interests or affiliations may belong; the Cosmopolitan Club, four musical clubs, Southern, New York state, New Jersey and other geographical clubs; various preparatory school associations, the Aero Club, Rifle Club, Chess Club, Catholic Club, Brotherhood of St. Andrew, and many others.

A remarkable system of student self-government has been established, with final authority in the hands of an Institute committee of twenty-seven members, representing every important student activity. There has been little excuse, of late years, for a boy's going through the Institute, "knowing no one except a fellow on whose heels I accidentally trod when we were in line at the registrar's office."

Except, however, in the fraternity houses Tech students from the foundation of the Institute have only by accident lived together under the same roof. In making plans for occupation of the sightly water front from Massachusetts avenue to the Cambridge bridge it was early determined to give much attention to the housing and recreation of the student body. A year or two hence the large Walker memorial structure, which the concrete pourers are now bodying forth, will serve as a gathering place for all sorts of groups and associations. It will contain a restaurant large enough to accommodate not only those who live in the dormitories but the very large number who live within commuting distance and who ordinarily take only the noon meal at the Institute. It is intended, evidently, to focus the fun of being a Tech man at this one palace of student democracy.

The L-shaped dormitory building, however, came first in the scheme of things, made possible by gifts of $150,000 and $100,000, from anonymous donors, supplemented by $100,000 from Coleman duPont, '84. Plans were drawn for six contiguous houses, separated by party walls like the houses in a city block, each unit having its own entrance and stairway. Four of these structures were to be regular Tech dormitories, the two at each end were to be left to fraternities who would occupy and run them just as they have been accustomed to carry on their own affairs in houses rented in Boston.

The dormitory has been designed to carry out the scheme of massive and monumental architecture that is demanded by the width of the Charles river basin. Except for the large Florentine tower that makes a valuable accession to an interesting sky line the structure is four stories high. For the exterior, Roman brick has been used, of the same warm tint as that of the stone of the educational buildings. There are decorative filets and panels and a setting off with trimmings of Bedford limestone. In the angle between the two wings there is now building the President's residence, the personal gift of Messrs. Stone and Webster. This will be set off by a dignified wall and a screen of trees.

Within the fire-proofed building the suites and rooms, all of very moderate rental for a dormitory of this kind, are clustered about single stairways. The architects decided that this plan was better than the so-called "hotel system," where the rooms are along corridors or hallways, with a number of different stairways for general use. "The type selected gives more the aspect of a home," one is informed, "a smaller number of students will be obliged to pass a given door with whatever of disturbance this may imply, and the small units, as has been said, afford a much greater factor of safety against fire and its consequent panics."

Every room gets sunlight. Where the units face east and west, the sleeping rooms are arranged on both fronts so that those rooms not caught by the morning sun will receive it in the afternoon. For an exposure of this kind the suites are arranged each with a study, a dressing room and a bedroom for two students. The study opening into the hallway is a room 12 by 16 feet, well lighted and having an open fireplace. From this, on the inner side, leads the

dressing room with a big door opening to the bed room with its large window.

"Almost all these boys want all the air there is at night," says the custodian in showing you through. "Well, they can get it readily enough, for these casement windows open very easily. Then, in the dressing room, there is no trouble about turning on the heat. You give one little twist like this."

"Some difference from my days in College House 60," observed the visitor, "pattering along the corridor with a coal scuttle at 7 o'clock in the morning to light the fire that never would stay in all night. This is college life de luxe."

Up in the tower are several single rooms, so diminutive as to deserve the adjective "cute," quite inexpensive and commanding from overhead as well as from a small side window a light that would make them ideal for architectural students or others having to do much drafting.

On each floor is a shower bath, equipped with all conveniences. "Gee, I have never taken so many baths in my life," admitted one of the interviewed. "It's so easy to slip in there both morning and evening." These baths should be first comfort to anxious mothers.

The dormitories now occupied for the first time will accommodate nearly two hundred students, about one-fifth of the whole number requiring accommodation of the kind. Others, presumably of the same general type, will follow as means are at hand for their construction. The present block is only about two hundred yards from the Walker memorial, where another season, the young men will find food and social facilities. About the same distance away is the gymnasium. The walk to Main street is one of six or seven hundred feet; to Massachusetts avenue about quarter of a mile.

Do the boys like these bedrooms as far as they have gone? On that score the only possible answer is affirmative. Soon after they got in they were so elated that to celebrate their release from the morgue they gathered together a vast pile of rubbish which had collected during their ward experiences and made of it a monster bonfire on the rough land back of the dormitory. "Tom Hannah," one hears, "brought out his trusty bagpipes and proceeded to render various touching selections. He was closely followed by Burke, with his noisy bugle, and the voices of any who felt like singing. Finally, about 11 o'clock the celebration broke up." For Tech this was really a sportive occasion.

"What about these boys getting in late at night, or early in the morning?" the custodian was asked.

"That is all right. They come and go when they want to. Each fellow has a key which will unlock the front door after 12 and unlock his own door, too."

"But suppose he cannot find the keyhole?" persisted the inquisitive one.

"Oh, that is all right, too," was the reply. "He won't be likely to wander away to spend the rest of the night in the streets. One of us is always looking out to see if everything is as it should be. Besides these Institute fellows are not that kind. Not one of them has ever come in drunk yet."

"At least, not to your knowledge and belief," was a somewhat cynical suggestion not very well received by the guardian, who hastened to add that if such an occurrence did take place the offender would be severely disciplined by his associates.

"They have local self-government here," he explained.

One learned that in each section an election has been held at which a committee has been chosen, one man from each class, the four adding a senior to their number. These five are responsible for order in the house. They are even now drafting rules and regulations which will be voted upon in general meeting. Each of the local committees will be represented in the Institute committee.

Thus in the past few weeks a beginning has been made of changing the Massachusetts Institute of Technology from a day school at which two thousand or more young men and a few young women attend lectures and do very remarkable work in specially constructed laboratories into an institution which takes a boy and

looks after his creature comforts as well as his intellect during twenty-four hours of the day. Not enough has yet been accomplished to say definitely just what the collegiate atmosphere of Tech will be like—how far it will resemble, and where it will differ from, that of Yale, or Dartmouth or the university two miles away with which it has effected a near-merger. "We may have much to learn about dormitories," says President Maclaurin. Whatever changes are effected by the new plans the President expresses a belief that nothing will alter "the old spirit, that spirit of thoroughness, breadth, high-mindedness and loyalty that makes the brand of a Tech man."—*Boston Herald.*

COLOR SCHEME FOR PIPES AT M. I. T.

Workmen in a metropolitan suburb the other day were at work on gas pipes in the streets and became tangled up in the water works so that a broken main and a miniature deluge were the results. No such thing can happen in the laboratories of the Massachusetts Institute of Technology for the coloring of the pipes would have been a warning and a man there looking for gas need strike neither oil nor water. The reason for this safety is that the pipes are colored according to their contents. It gives a kaleidoscopic effect to the pipe galleries and a somewhat variegated effect to the great laboratories, but is very useful.

It is not unusual in industrial establishments to paint pipes so that confusion may be avoided when repairs or additions are to be made. But in general it is some simple color scheme that will be all that is needed. But at Tech there is the study in the laboratories of all kinds of industrial operation and altogether there are no less than twenty-one different liquids and gases that are supplied in considerable quantities. The pipes make an intricate pattern throughout the buildings and one who sees them will realize the need of some distinguishing marks between pipes of the same size carrying different items. It would be awkward, for example, to tap a pipe supposed to be for burning gas and find that it was filled with ammonia at pressure. The color scheme at Tech, therefore, has required considerable thought, and a system of tintings has been devised by Professor E. A. Miller, head of the mechanical engineering department, and A. S. Smith, superintendent of buildings and power.

Altogether there are six different groups of pipes conveying liquids or gases for regular consumption at the Institute, those for water, steam, air and for burning gas together with the less familiar refrigerating processes and the regular drainage pipes. These do not include the ventilating ducts, which are to be seen in plenty in the lower corridors, or the electrical conduits which were placed in the construction work before the concrete was run or the pipes for the sprinkler system with which Tech guards its already fireproof hallways and laboratories against fire.

Altogether there are about fifty miles of pipe in the M. I. T. buildings ranging from the little inch water supply to the great fourteen-inch steam mains. Much of it runs through pipe galleries to the places from which it has local distribution. In these galleries, a hundred or two hundred feet long, the tintings of the joints in different colors gives a unique effect. In the big laboratory of mechanical engineering the pipes are painted through their entire lengths, but in other parts of the building they are indicated by little patches of color usually at the joint, the general runs being in white.

There are three kinds of water in use at Technology, the amber fluid from the Charles river basin, which serves the experimental laboratory for the vast quantities that it will require, the pipes of which are in emerald green, the Cambridge domestic supply in pipes of light

blue and the filtered supply for drinking purposes, in light yellow. Besides these there are considerable quantities of distilled water on tap in the laboratories, but this is made on the spot and the supply pipes, in block tin, run only short distances and there is no reason for confusion. These pipes are unmarked save by their bright exterior.

Whoever in his ramblings about the laboratories comes across a pipe painted or marked in light drab will know that it contains compressed air. If it is at low pressure, 8 pounds to the square inch, there will be no variety to the color, but if the pressure is high, 80 pounds or more, the fittings will be marked or lined with black. The vacuum cleansing system is in pipes of slate color and the chemical suction pipes are light brown.

There are seven varieties of pipes related to the steam laboratory. Those carrying steam at high pressure are white or black and the pressure at 60 pounds is carried in pipes of white with orange color at the joints and fittings. The exhausts at atmospheric pressure and vacuum are orange, the latter with red fittings while the three drips, high, intermediate and low, are oxide red the last two with black and orange trimmings respectively.

In the refrigeration work the brine pipes are colored ultramarine, out of compliment perhaps to the salt, salt ocean, while the ammonia circulates in pipes of solemn black. The illuminating gas system is marked by colorings of maroon, the sanitary pipes of the building are white or black and the cast iron laboratory wastes are colored VanDyke brown. Sulphuretted hydrogen, in extensive use in the laboratories, is conducted to where it is needed in pipes of light green.

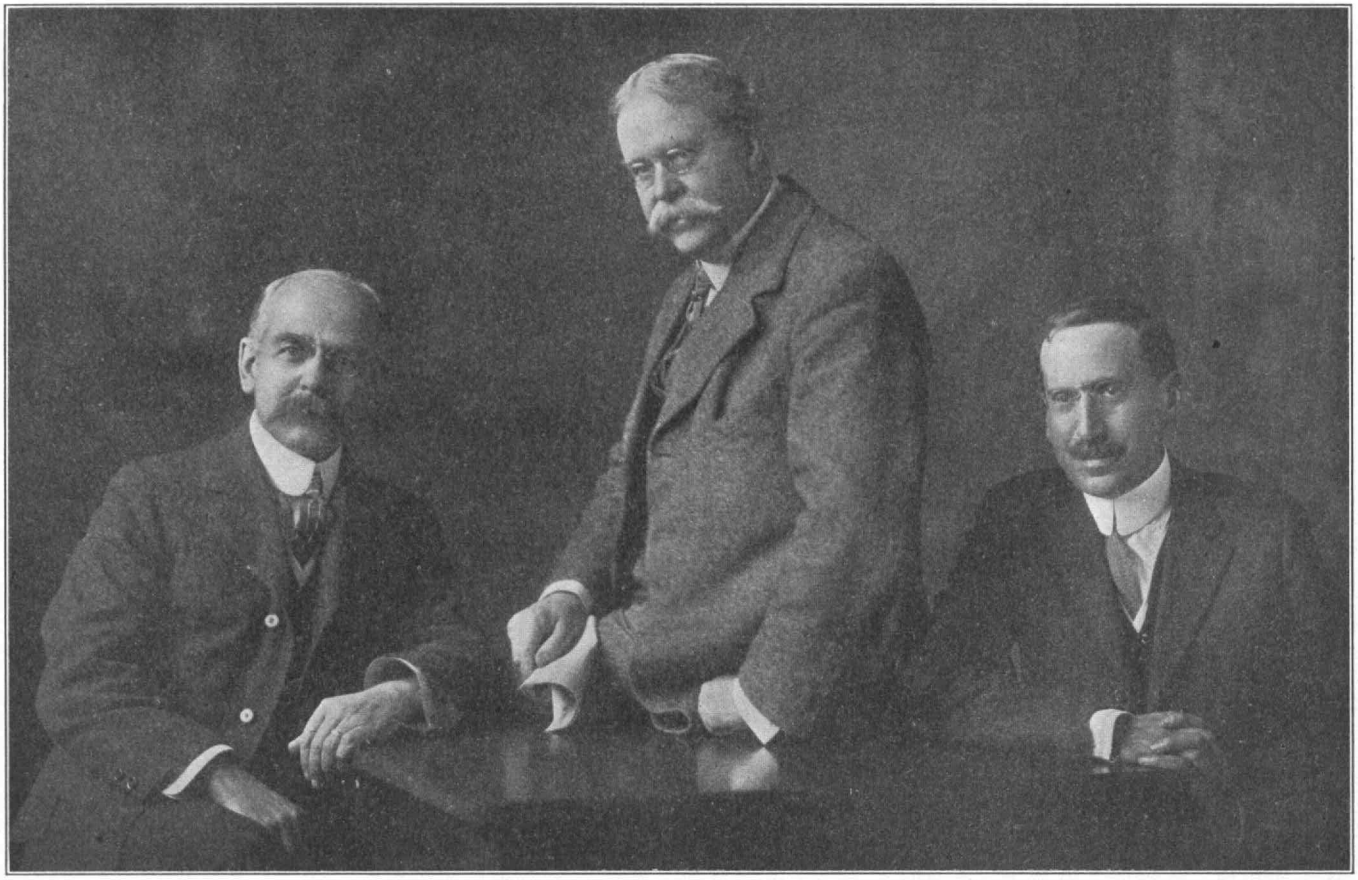
Technology and Preparedness

That the Alumni Association can be of much assistance to the national committees appointed to prepare for military and industrial defense is fully appreciated by members of the committees themselves.

There is one great and important subject which is the most obvious field for the work of Technology men, that is the field of research. The recently formed National Research Council which consists of one hundred men connected with science and engineering, is completely organized, and has already definite plans of procedure well in hand. This committee through its chairman, George Hale, '90, and through the chairman of the executive committee, Mr. John Carty, chief engineer of the American Tel. & Tel. Co., is in close coöperation with the Institute and with the alumni committee. At the request of the Council, the Institute is to appoint a research committee representing the Corporation, alumni and Faculty which will go into the matter of research as far as it is connected with the Institute itself. A questionnaire covering all forms of research, investigation and experiment will be prepared by the National Research Council to be sent to the alumni of the Institute.

Another thing to be considered by the alumni committee is that of industrial defense. That there is much danger of competition from European countries after the war, is becoming more and more apparent, and the problem of business coöperation in this country to offset it is having profound study. Technology alumni can also help the Industrial Preparedness Committee of the Naval Consulting Board which is studying our resources for the manufacture of arms, munitions, supplies, etc.

Another practical thing is the personnel index suggested by Dr. Hollis Godfrey, '98, of the Advisory Commission to the Council for National Defense. This index when analyzed will be a "Who's who" of Tech men, and can be used for securing exactly the kind of skill and experience that is needed in the case of an emergency. This index would also be of great value for filling positions in the manufacturing and business world where men of special training and experience are called for.



ADMINISTRATIVE BOARD OF THE SCHOOL FOR HEALTH OFFICERS

From left to right: Professor Whipple, Secretary; Professor Sedgwick, Chairman of the Administrative Board; Professor Rosenau, Director of the School

THE SCHOOL FOR HEALTH OFFICERS

Technology and Harvard Co-operate to provide instruction in every field of public health service

The School for Health Officers has begun its fourth year with an increased registration and, what is better, with an accelerating enthusiasm. Three facts have already become established,—the graduates of the school are making good; the demand for trained men in the public health service is increasing and has thus far exceeded the supply; the school is becoming known as a place where men can get the training which they need for this service.

The registration in the first year was six, the second year, twelve, the third year, fifteen, and the present year, twenty-four. The Certificate in Public Health (C. P. H.) has thus far been awarded to nineteen men, of whom fifteen already held the degree of doctor of medicine, two the degree of bachelor of science, one bachelor of arts, and one bachelor of philosophy. During the present year there are already sixteen candidates for the certificate, one of whom is a woman. Ten of the candidates have the degree of doctor of medicine. Of the fifty-seven persons who have been registered in the school forty-three are from our own country and represent thirteen different states; seven are from other countries, three from China, one from Colombia, one from Italy, one from Canada, and one from Siam. The latter is Mahidol of Siam, Prince of Songkla, brother of the present ruler, who purposes to spend several years in the school in order to fit himself for promoting public health in all its phases in his own country.

The graduates of the school are already becoming widely scattered, not only geographically but in nature of service. Seven have become health officers in cities or towns, and are located in Maine, New Hampshire, Connecticut, New Jersey, Alabama, Texas, and Ohio; two are district health officers in the service of the Massachusetts State Department of Health; one is at the Leper Settlement at Penekese Island, Massachusetts; one is epidemiologist for the Indiana State Board of Health. Two are with the International Health Board and located in the West Indies; one former student is employed to look after the sanitary conditions of a large industrial establishment in Massachusetts and the health of the operatives; one is in Belgium engaged in relief work; one is in charge of the American Red Cross work in the Balkans. Four graduates are engaged in public health instruction,—one is professor of preventive medicine in the University of Iowa, one is instructor in hygiene and bacteriology in Western Reserve Medical School, one is instructor in public health administration in the School for Health Officers, another was for a year at the Harvard Medical School in China. Five of the students in the school volunteered to go to Servia with Dr. Strong and did excellent service in the campaign against typhus fever.

Such facts as these are most significant. They indicate that the movement to elevate the character of the public health service throughout the country and throughout the world is taking definite shape. At the recent convention of the American Public Health Association at Cincinnati one of the keynotes was the need of the "full time health officer." Medical associations are also urging this idea. It is being recognized that public health officers need special training not only in hygiene, sanitation and preventive medicine, subjects related to but yet apart from the field of medicine, but also in administration in educational methods and in the enforcement of laws. It is becoming more and more evident that a successful school for the education of

health officers must be grounded in a great university.

Our school is about to have a vigorous, friendly rival, the Institute of Hygiene at Johns Hopkins University, recently endowed by the Rockefeller Foundation. Friends of Harvard and of the Massachusetts Institute of Technology naturally regret that Boston was not chosen to be the home of this new school so richly endowed, but those who believe that the cause of public health is of more importance than that of any one institution will see in these two schools not only an opportunity for friendly rivalry, but an opportunity for coöperative work. Johns Hopkins with its traditions for research may naturally be expected to turn its energies in that much needed direction, while Harvard and Technology, with their well equipped departments of engineering, law and government, may well emphasize the idea of administration. In 1914, in an address given at the Conference of Sanitary Officers of the State of New York, the writer, after describing the objects of our school, said: "The School for Health Officers calls to the young men of the country and says 'the field is ripe for the harvest' and it calls to the other universities and says 'join us in this great movement to secure men for the public health service.' "

Accordingly the School for Health Officers of Harvard University and the Massachusetts Institute of Technology extends its greetings to the new Institute of Hygiene at Baltimore and welcomes it as an ally in the cause.

To achieve the ideal of our school, which is a place where a student may fit himself adequately for any field of public health service, financial support must be provided. If a million dollars is needed at Johns Hopkins, something more than tuition fees is needed for the School for Health Officers in Boston. The administrative board of the school makes no appeal for funds but patiently waits for friends of the cause to witness the steady growth of the school and to appreciate the unique opportunities for public health instruction which exist in Boston. Two generations ago the state of Massachusetts led the states in establishing a State Board of Health which has long been a model to the country. The opportunity now exists for establishing here in Boston the strongest school in the country for training men for the public health service.

GEORGE C. WHIPPLE, '89.

Cleveland the Mecca in April

The Technology Club of Northern Ohio has taken time by the forelock, and a complete program for the meeting of the Technology Clubs Associated, which will take place in Cleveland, April 19, 20, and 21, has been arranged.

The plans call for three days, full of interest, and those who know the progressive spirit of the Technology Club of Northern Ohio understand that these arrangements will be complete in every detail.

Matters have been taken in time, early enough so that reservations for headquarters, hotel accommodations and the other various functions have been made ahead of other organizations, thus assuring ample accommodations and satisfactory service.

The meeting occurs during the April vacation, and includes the last three days of the week, Thursday, Friday and Saturday.

The latest development is an invitation from the Akron delegation to visit that city on Friday, the 20th. Special trains will be put at the disposal of the delegates, and the keys of the city of Akron will be presented to them on arrival. "Akron Day" will certainly be one of the great features of the reunion.

This will be the fifth meeting of the Technology Clubs Associated. The meetings have been held in the following cities: New York, Chicago, Pittsburgh, and Boston. The Boston meeting was simply a part of the great Reunion last spring, but the other three meetings have been particularly enjoyable, and no two of them have been alike. Cleveland should draw large numbers from Buffalo and Rochester on one side, Pittsburgh and Central Ohio on the south, and Detroit on the west. A large delegation always attends from Boston, and it is confidently expected that the number this year will be larger than usual.

OFFICERS OF LOCAL ALUMNI ASSOCIATIONS

Partial list of the Governing Boards of Technology Clubs—Several hundred alumni are interested indirectly in running these Clubs

Following is a list of the officers of the local alumni associations, and of the Technology Clubs Associated:

Technology Clubs Associated: president, F. A. Smythe, '89; vice-presidents, P. W. Litchfield, '96, Hollis Godfrey, '98, Lester D. Gardner, '98; A. T. Hopkins, '97; secretary-treasurer, Walter Humphreys, '97; associate secretary, Maurice E. Allen, '08; associate secretary, Donald R. Stevens, '11.

Akron—M. I. T. Club of Akron, Ohio: president, C. R. Johnson, '11; Secretary-treasurer, Walter P. Keith, '14.

Albany—Technology Club of Albany, and Schenectady, New York: president, Russell Suter, '00; vice-president, Robert Palmer, '04; secretary-treasurer, Edward H. Sargent, '07.

Atlanta—Atlanta Association of M. I. T.: president, Frederick W. Hadley, '93; secretary, William J. Sayward, '01.

Birmingham—Southeastern Technology Association: president, Paul E. Chalifoux, '02; secretary, Fernand C. Weiss, '13; Alumni Council representative, H. S. Mork, '99.

Boston—Technology Club of Boston: president, Samuel C. Prescott, '94; vice-president, Dwight Porter; secretary, Robert S. Williams, '02; treasurer, Andrew D. Maclachlan, '96.

Bridgeport — Technology Club of Bridgeport: president, H. R. Philbrick, '06; treasurer, P. W. Dalrymple, '12; secretary, Wilbur A. Swain, '15; treasurer, Philip W. Dalrymple, '12; Alumni Council representative, F. C. Blanchard, '91.

Buffalo—Technology Club of Buffalo, New York: president, Harry L. Noyes, '90; secretary and treasurer, Ellery Earle Root, '08; Alumni Council representative, Arthur C. Anthony, '86.

Butte—Technology Club of Montana: president, Charles W. Goodale, '75; vice-president, Ralph Hayden, '04; secretary-treasurer, C. D. Demond, '93.

Chicago—Northwestern Association of the M. I. T.: president, Harry M. Montgomery, '79; vice-president, Frank F. Fowle, '99; secretary-treasurer, Harvey S. Pardee, '02'; Alumni Council representative, B. R. T. Collins, '88.

Chile—Technology Club of Chile: president, W. L. Stevens, '00; secretary, J. L. Bray, '12.

China—Technology Club of China: president, W. W. Stevens, '98; secretary-treasurer, W. A. Adams, '08.

Cincinnati—Cincinnati M. I. T. Club: president, A. H. Pugh, '97; vice-president, Stuart R. Miller, '07; secretary, Edward H. Kruckemeyer, '11; treasurer, Charles R. Strong, '11; Alumni Council representative, H. N. Dawes, '93.

Cleveland—Technology Club of Northern Ohio: president, A. T. Hopkins, '97; vice-president, Frederick Metcalf, '90; secretary-treasurer, Allen Spicer, '13; Alumni Council representative, G. R. Wadsworth, '98.

Technology Association of the Connecticut Valley: president, Edmund P. Marsh, '89; vice-president, C. E. Whitney, '91; secretary-treasurer, Ernest W. Pelton, '03; Alumni Council representative, Eben S. Stevens, '68.

Dayton—Dayton Technology Association; president, Walter G. Wuichet, '89; vice-president, Henry M. Waite, '90; secretary-treasurer, Carlton D. Putnam, '08; Alumni Council representative, Charles F. Park, '92.

Denver—Rocky Mountain Technology Club: president, S. C. Lind, '02; vice-president, Harold O. Bosworth, '02; secretary, John J. Mullen, '08; Alumni Council representative, Allen H. Rogers, '90.

Detroit—Detroit Technology Association: president, George R. Anthony, '98; vice-president, Frederick C. Sutter, '93; secretary-treasurer, Donald V. William-

son, '10; Alumni Council representative, Everett Morss, '85.

Duluth—Technology Club of Lake Superior: president, Samuel B. Sheldon, '89; vice-president, Walter G. Zimmermann, '98; secretary, Floid M. Fuller, '06.

Fall River—Technology Club of Fall River: president, George H. Eddy, '75; treasurer, Arthur E. Hirst, '13; secretary, Arthur L. Shaw, '09.

Hartford—Technology Club of Hartford: president, J. H. Fellows, '06; vice-president, H. E. Dart, '01; secretary-treasurer, George W. Baker, '92; Alumni Council representative, G. H. Gleason, '03.

Hawaii—Technology Club of Hawaii: president, Jacob F. Brown, '78; secretary, Norman Watkins, '98; Alumni Council representative, Edwin S. Webster, '88.

Indianapolis—Indiana Association M. I. T.: president, J. Lloyd Wayne, 3d, '96; vice-president, W. G. Wall, '96; secretary, Wilson B. Parker, '88.

Japan—Technology Association of Japan: secretary-treasurer, Takuma Dan, '78; Alumni Council representative, H. W. Stevens, '04.

Kansas City—Southwestern Association of M. I. T.: president, Frank Cushman, Jr. '01; vice-president, Albert E. Lombard, '02; secretary-treasurer, Hermann C. Henrici, '06; Alumni Council representative, W. Lyman Underwood, '98.

Lawrence-Lowell—Technology Club of the Merrimack Valley: president, Robert F. Pickels, '87; vice-president, Edgar H. Barker, '86; secretary, John A. Collins, Jr., '97; treasurer, William O. Hildreth, '87; Alumni Council representative, R. A. Hale, '77.

Los Angeles—Technology Club of Southern California: president, Edward L. Mayberry, '06; vice-president, Edward Johnson, '99; secretary-treasurer, Paul E. Jeffers, '12; Alumni Council representative, John C. Chase, '74.

Louisville—The Technology Club of Louisville, Ky.: president, James Clark, Jr., '90; secretary, L. S. Streng, '98.

Manchester—Technology Club of New Hampshire: president, Edward W. Rollins, '71; vice-president, Norwin S. Bean, '94; secretary-treasurer, Walter D. Davol, '06; Alumni Council representative, Andrew Fisher, Jr., '05.

Milwaukee—Technology Club of Milwaukee: secretary, J. F. Blackie, '04; Alumni Council representative, George C. Wales, '89.

Minneapolis—Technology Association of Minnesota: president, W. H. Bovey, '94; vice-president, G. H. Goodell, '92; secretary, Willis R. Salisbury, '12; treasurer, Mark G. Magnuson, '04; Alumni Council representative, Allan W. Rowe, '02.

Montreal—Technology Club of Lower Canada: president, Herbert O. Keay, '00; vice-president, George R. Heckle, '99; secretary-treasurer, E. B. Evans, '06; Alumni Council representative, George W. Vaillant, '92.

New Bedford—Technology Club of New Bedford, Mass.: president, W. A. Robinson, Jr., '97; secretary-treasurer, Richard D. Chase, '92; Alumni Council representative, C. F. Lawton, '77.

New Orleans—Technology Club of the South: president, Benjamin A. Oxnard, '75; vice-president Moise A. Goldstein, '04; secretary, John H. O'Neill, '10; Alumni Council representative, Donald G. Robbins, '07.

New York—Technology Club of New York: president, F. C. Schmitz, '95; vice-president, Schuyler Schieffelin, '90; treasurer, Ira Abbott, '81; assistant treasurer, Clifton W. Wilder, '98; secretary, Lester D. Gardner, '98; Alumni Council representative, Ralph H. Howes, '03.

Philadelphia — Technology Club of Philadelphia: president, Eugene S. Foljambe '01; vice-president, H. L. Walker, '05; secretary-treasurer, C. J. Walton, '14; Alumni Council representative, Elisha Lee, '92.

Pittsburgh — Pittsburgh Association M. I. T.: president, William B. Blake, '87; vice-president, Frank A. MacDonald, '90; secretary-treasurer, H. A. Rapelye, '08; assistant secretary, L. B. Duff, 3d, '14; Alumni Council representative, L. K. Yoder, '95.

Pittsfield—Berkshire County Alumni Association: treasurer, Paul Frederick;

secretary, Earl E. Ferry, '12; Alumni Council representative, Walter B. Snow, '82.

Portland—Technology Association of Oregon: president, Robert S. Edwards, '02; secretary-treasurer, Charles A. Merriam, '06; Alumni Council representative, A. D. Maclachlan, '96.

Providence — Technology Club of Rhode Island: president, Z. W. Bliss, '89; vice-president, Frank L. Pierce, '89; secretary-treasurer, Clarence L. Hussey, '08; Alumni Council representative, E. B. Homer, '85.

Rochester—Technology Club of Rochester: president, Adolph Lomb '92; first vice-president, James C. Dryer '99; second vice-president, James P. Barnes, '05; secretary-treasurer, '07; William S. Lucey, Alumni Council representative, A. A. Packard, '98.

St. Louis—St. Louis Society of the M. I. T.: chairman, John L. Mauran, '89; secretary-treasurer, Amasa M. Holcombe, '04; assistant secretary, Benjamin F. Thomas, Jr., '13; Alumni Council representative, Charles M. Spofford, '93.

Salt Lake City—Intermountain Technology Association: president, John H. Leavell, '07; vice-president, Edward P. Fleming, '01; secretary-treasurer, W. H. Trask, Jr., '06; Alumni Council representative, George E. Russell, '00.

San Francisco—Technology Association of Northern California: president, Arthur E. Wells, '06; secretary-treasurer, Howard F. Clark, '12; Alumni Council representative, Burton G. Philbrick, '03.

Seattle—Technology Club of Puget Sound: president, M. P. Anderson, '10; vice-president, Walter A. Gleason, '97; secretary-treasurer, W. Scott Matheson, '99; Alumni Council representative, A. G. Robbins, '86.

Spokane—Inland Empire Association of the M. I. T.: president, Shirley S. Philbrick, '98; vice-president, William J. Roberts, '91; secretary, Philip F. Kennedy, '07; Alumni Council representative, H. W. Gardner, '94.

Springfield—Technology Club of Springfield: president, F. W. Fuller, '96; secretary-treasurer, George W. Hayden, '95; Alumni Council representative, F. W. Fuller, '96.

Steelton—Technology Club of Central Pennsylvania: secretary, Farley Gannett, '02.

Syracuse—M. I. T. Club of Central New York: president, H. W. Jordan, '91; vice-president, E. M. Smith, '06; secretary-treasurer, James R. Vedder, '07; Alumni Council representative, Theodore H. Skinner, '92.

Urbana—Tech Club of the University of Illinois: president, F. H. Newell '85; secretary-treasurer, Edwin Frank, '06.

Washington—Washington Society of the M. I. T.: president, O. C. Merrill, '05; vice-president, Herbert S. Bailey, '06; secretary, F. Charles Starr, '05; Alumni Council representative, Henry Morss, '93.

Worcester—Technology Association of Worcester County: president, Albert S. Heywood, '92; vice-president, Frank E. Davis, '83; secretary-treasurer, Louis E. Vaughan, '02; Alumni Council representative, O. B. Denison, '11.

Meeting of Alumni Secretaries

Walter Humphreys, secretary of the Alumni Association, Institute of Technology, was a delegate at the Fifth Annual Meeting of the National Association of Alumni Secretaries, which was held at the Vanderbilt University, Nashville, Tennessee, October 26, 27 and 28.

The general topic was, "The ultimate purpose of alumni organizations; What has been accomplished; What the future may develop."

Mr. Humphreys made a very interesting report of his trip at the November meeting of the Alumni Council.

Giant Pump at Tech

The latest acquisition to the Technology hydraulic laboratory makes the work of a fire engine look like that of a pigmy.

The ordinary fire engine has a capacity of about 1,000 gallons a minute, while the new Tech pump has a capacity of 22,000 gallons per minute. It is a centrifugal pump, and will supply the main flume in the laboratory from which the water is drawn for the numerous hydraulic experiments.